

VERMONT MEDICINE

THE ROBERT LARNER, M.D. COLLEGE OF MEDICINE AT THE UNIVERSITY OF VERMONT

SPRING 2021



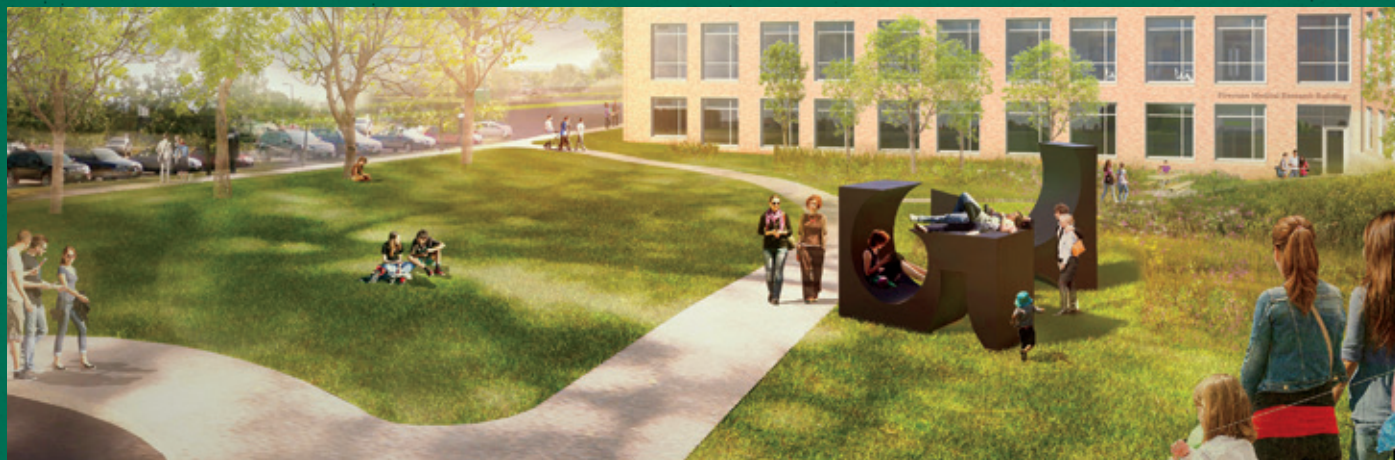
THE PLACES THEY'LL GO

Class of '21 faces the future



ALSO FEATURED: WHITE COAT NOTES • VT LEND • SUPPORTING VT KIDS

PROFILE IN GIVING



The Anton Courtyard



A Record of Commitment

Since his graduation more than 50 years ago, RAYMOND ANTON, M.D.'70, has been a loyal supporter and volunteer leader for the Larner College of Medicine. A devoted class agent, Dr. Anton served on the Medical Alumni Executive Committee from 1990 to 2004, and was its President from 2002 to 2004. With his fellow Medical Alumni Executive Committee members, Dr. Anton was also intimately involved in the creation of the 21st Century Fund, a precursor to the COM Fund, which encouraged increased alumni support. In 2015, in recognition

of his service, Dr. Anton was awarded the A. Bradley Soule Alumni Award from the UVM Medical Alumni Association—the association's highest honor.

Dr. Anton continues to work full-time as an anesthesiologist in an outpatient surgical facility in Connecticut. Since completing his term as president of the Alumni Association, he has continued his involvement and philanthropic support of the College at the highest level. In 1987, his strong family legacy contributed to his desire to create, along with his mother, Evelyn, the Harry J. Anton, M.D.'40 Memorial Fund at the College of Medicine in honor of his father, as well as the Harry J. Anton classroom. This well-funded endowment continues to be a valuable resource for the College to this day. In 2014, Dr. Anton significantly added to the Harry J. Anton, M.D.'40 Memorial Fund in honor of his 45th Reunion.

Dr. Anton's record of generosity continues in a truly significant way with his latest commitment to fund the Anton Courtyard, adjacent to the new Firestone Medical Research Building, now under construction on the medical campus. This new greenspace will be an important area for gathering and relaxation for the entire UVM community for years to come, and a fitting tribute to the Anton family's legacy of support to this College.



The University of Vermont
LARNER COLLEGE OF MEDICINE

The University of Vermont Larner College of Medicine | Medical Development & Alumni Relations Office
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Two Larner College of Medicine alums in Vermont—James Metz, M.D.'06, and Nick Bonenfant, M.D.'17,—are breaking new ground in the critical pediatric fields of child abuse prevention and mental health. **By Michelle Bookless**

HALL A

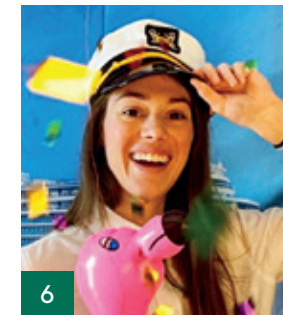
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WEB EXTRAS

See more online at
med.uvm.edu/vtmedicine/web-extras including videos, photos, and blog posts.



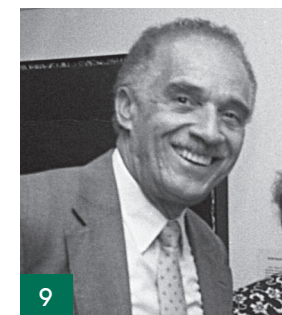
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On the Cover:
Students in the Class of 2021 celebrate their residency matches in a virtual event.

FROM THE DEAN



RICHARD L. PAGE, M.D.
Dean, The Robert Larner, M.D. College of
Medicine at The University of Vermont

The cover of this issue of *Vermont Medicine* brings a smile to my face, as I hope it does yours. The collage of photographs speaks volumes about our College and the year that has just passed. Our Match Day is like none other, even in normal times. Rather than wearing suits and formal attire, the students are dressed up for “Tropical Paradise,” the theme that they selected for this year’s event. Aside from the festive backgrounds, this is not a group photo; rather, these are pictures of 11 individual screen shots necessitated by the physical distancing that we have become all too accustomed to in this very strange time. This year, and last year for that matter, a pandemic did not keep our senior students from celebrating. They may be physically separated, but they are together. They are together in terms of their class spirit and, in an irony of a Zoom event, they are able to share a certain intimacy with us as we join them in their homes with their loved ones. This is a very special class, and as the pages inside demonstrate, they will go far.

This class is not alone in having triumphed over adversity in the time of COVID-19. I am amazed and inspired by the resiliency and commitment of the Larner community that I have witnessed over the last year. Every student has faced challenges, dating back to Governor Scott’s Stay Home/Stay Safe order in March 2020. Our graduate students had to pivot to non-laboratory work and then physical distancing regulations after they returned to the bench. Our preclinical students, including the Class of 2024, who entered during the pandemic, faced challenges of remote and then hybrid learning. And our clinical students initially had to be removed from the hospital and clinics (although they maintained their curricular momentum) and then entered a clinical world that presented new challenges and even some unique opportunities (such as being on the front line of a once-in-a-century pandemic), with the added difficulty of a cyberattack to our clinical partner, the UVM Medical Center.

Likewise, our outstanding staff and faculty have stepped up to the challenge, not just managing to survive, but finding ways to contribute to our local and worldwide response to the pandemic. Our educators made adjustments to maintain education without missing a day or delaying progression; they even developed a course on telemedicine. Our researchers continued their important work, many directly addressing this pandemic with work that ranged from COVID testing to vaccine development and the public health response to this pandemic.

We have not reached the end of this crisis, with challenges continuing to arise, such as premature resumption of activities, variant strains, and vaccine denial. But there is great reason for hope. With every day, more of the population is vaccinated, and these vaccines are nothing short of miraculous as one considers the pace at which they were developed by the worldwide biomedical community. What an amazing time to be in biomedical science and health care.

Our hope for the future should likewise be bolstered by the other stories in these pages. Contained within are profiles of our commitment to education, health care and research, in support of our communities. As a physical demonstration of our commitment to the future, the Firestone Medical Research Building is taking shape in our old Given parking lot. I am especially proud of our commitment to diversity, equity and inclusion, and to wellness and mental health; never before have these been greater priorities for our College, as they represent the very heart of our commitment to professionalism.

As we anticipate graduation for the Class of 2021, I look forward to greeting the class of 2025 (perhaps even without a mask). But no matter what limitations to activities remain in the fall, we can be confident that our students will arrive at a College that aspires to provide an education that is second to none.

Rich

Gender Equity Celebration Honors Larner Changemakers

On March 4, 2021, the Larner College of Medicine recognized several community members for their outstanding commitment to gender equity during the second annual Celebration of Gender Equity in Medicine and Science, hosted by the Office of Diversity, Equity and Inclusion. The event featured a keynote

address, titled “Bystander or Advocate? Who Do You Choose to Be?,” by Diane Magrane, M.D., former Larner associate dean for medical education, past director of Executive Leadership in Academic Medicine (ELAM), and former Association of American Medical Colleges (AAMC) associate vice president for faculty development and leadership.

Awardees

GENDER EQUITY CHAMPIONS

Pamela Gibson, M.D., *Associate Professor of Pathology and Laboratory Medicine (faculty recipient)* and **Stellar Levy, Class of 2023** *medical student (student recipient)*



GENDER EQUITY OUTSTANDING ACHIEVEMENT IN MEDICINE AND SCIENCE

Elizabeth Bonney, M.D., M.P.H., *Professor of Obstetrics, Gynecology & Reproductive Sciences*



POLARIS AWARD FOR OUTSTANDING MENTORSHIP

Melissa Davidson, M.D., *Interim Chair of Anesthesiology and Associate Dean for Graduate Medical Education*



RISING STAR EMERGING PROFESSIONAL

Katie Wells, M.D., M.P.H., *Assistant Professor of Surgery, Division of Emergency Medicine*



Tandoh Named to Dean’s Senior Advisory Group

Margaret A. Tandoh, M.D., associate professor of surgery and associate dean for diversity, equity and inclusion, has been named to the Dean’s Senior Advisory Group, assuring that all senior discussions will include her perspective on issues of diversity, equity and inclusion. She is also co-chair of the Dean’s Advisory Committee on Diversity, Equity and Inclusion.



UVM MASTER OF PUBLIC HEALTH PROGRAM EARNS NATIONAL ACCREDITATION

UVM’s Master of Public Health Program has earned national accreditation from the Council on Education for Public Health (CEPH), the independent agency recognized by the U.S. Department of Education to accredit schools of public health and public health programs. Nationally recognized as the quality standard of education and training in public health, CEPH accreditation is awarded only to programs that meet rigorous criteria and assures the quality of UVM’s Master of Public Health Program and education to achieve excellence in practice, research, and service through collaboration with organizational and community partners. The news is timely, given the increased awareness and appreciation for the science of public health due to the COVID-19 pandemic, and a reported 20 percent increase in Master of Public Health Program applications in 2020, according to the Association of Schools and Programs of Public Health. Led by **Jan K. Carney, M.D., M.P.H.**, associate dean for public health and health policy, the 42-credit M.P.H. Program has produced 137 graduates to date. In addition to the new CEPH recognition, the program has been accredited by the New England Commission of Higher Education (NECHE) since its launch in 2014.

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Spring 2021 • Published April 2021

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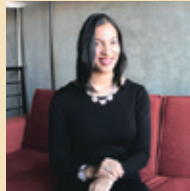
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COLEMAN NAMED LARNER WELL-BEING ADVISOR

In her new role as the College's first well-being advisor, **Marissa N. Coleman, Psy.D.**, will be



focused on helping to foster a supportive, equitable and inclusive environment for all members of the student community. Coleman is available to Larner medical and graduate students for large group presentations and small group or individual discussions on wellbeing. She is available specifically for members of the BIPOC (Black, Indigenous, and People of Color) community, and for consultations with individual students. Coleman is a licensed clinical psychologist and lead staff psychologist and equity, diversity, and inclusion advisor at UVM Medical Center, where she has practiced since 2018. Coleman received her B.A. in psychology from DePaul University before earning her Master of Arts and Doctor of Psychology degrees from The Chicago School of Professional Psychology. She was a postdoctoral fellow in psychology at Emory University School of Medicine. An American Academy of Psychotherapists Scholarship recipient and an International Affairs Research Fellow at The Chicago School of Professional Psychology, Coleman has published research in a number of journals, including the *Journal of Family Violence* and the *Journal of Pan-African Studies*. She is also a contributor to the Guilford Press *Handbook of Depression*.

"Schools must create a culture that normalizes the need for self-care and includes vulnerability as part of professionalism."



— From an essay by Chris Veal '21, titled "We Burn Out, We Break, We Die: Medical Schools Must Change Their Culture to Preserve Medical Student Mental Health," published in *Academic Medicine*



Andrea Villanti, Ph.D., M.P.H.



William Copeland, Ph.D.

Villanti, Copeland Named to List of World's Most Influential Researchers

Two Larner College of Medicine faculty have been named to a list of the world's most influential researchers, based on the number of times their published studies have been cited by other researchers over the past decade.

UVM faculty named to the list are **Andrea Villanti, Ph.D., M.P.H.**, associate professor of psychiatry, and **William Copeland, Ph.D.**, professor of psychiatry. Researchers on the list are in the top 1 percent of all scholars whose work has been cited. The prestigious Highly Cited Researchers list is compiled and published annually by Clarivate Analytics.

Villanti's primary research focus is on young adult tobacco use, including predictors and patterns of use and interventions to reduce tobacco use in young adults. She has received funding from a range of organizations, including the National

Institutes of Health and the Robert Wood Johnson Foundation and published more than 150 papers in peer reviewed journals.

Copeland is a professor of psychiatry and the director of research at the Vermont Center for Children, Youth and Families. His research program has focused on understanding the developmental epidemiology of emotional and behavior health across the lifespan. This work includes understanding the interplay between early adverse experiences and genetic vulnerability with other individual, family and contextual characteristics. His research, supported by the National Institutes of Mental Health, the National Institute on Drug Abuse and the National Institute of Child Health and Human Development, has led to over 100 peer-reviewed publications.

Notable

Research



Jason Botten, Ph.D.

Industry Collaboration Opens Door to Treatment for Viruses like SARS-CoV-2

Amid the biomedical science world's race to develop and distribute vaccines and treatments for COVID-19, a team made up of a Larner College of Medicine scientist and partners at Lebanon, N.H.-based Celdara Medical are busy building a potentially game-changing therapy to fight RNA viruses like SARS-CoV-2.

The team, which includes Professor of Medicine **Jason Botten, Ph.D.**, (above) recently received a two-year Small Business Technology Transfer Research (STTR) grant from the National Institute of Allergy and Infectious Disease (NIAID) of the National Institutes of Health (NIH). This funding supports the development of a novel, broad-spectrum therapeutic/prophylactic against RNA viruses, which, in addition to the virus responsible for COVID-19, includes SARS, Ebola, influenza, and pathogenic arenaviruses.

This work builds on discoveries made by Botten, who serves as principal investigator for the project and is also a scientific founder of Celdara, and a founding member of Celdara's Pandemic Security Initiative Scientific Advisory Board.

"RNA viruses such as SARS-CoV-2 continue to wreak havoc on a world ill-equipped to control them," says Irena Ivanovska, Ph.D., Celdara's program lead and director. "Successful development of this broad-spectrum antiviral agent would provide a novel first-line therapy and importantly, enable rapid deployment during

new or re-emerging viral outbreaks such as the current COVID-19 pandemic."

Botten's research has demonstrated that the drug's target is required for the propagation of arenaviruses, coronaviruses, and filoviruses, and that it associates with these viruses as well as orthomyxoviruses and hantaviruses. In the target's absence, viral particles cannot attach to host cells, effectively stopping viral spread.

"We've made great strides to understand how this protein regulates the infectivity of viral particles, and the NIAID funding provides an exciting opportunity to move beyond the basic science and to translate our discoveries into medicines," says Botten. "Because the host molecule targeted is required for multiple families of pathogenic viruses, we expect that a single antiviral could broadly protect against many of the most dangerous pathogenic threats, thereby preventing or at least mitigating future outbreaks and pandemics. We are thrilled by this opportunity to develop such a countermeasure."

Celdara, an experienced biopharma developer, has a robust anti-infectives pipeline which forms the foundation from which the Pandemic Security Initiative (PanSec) was launched. PanSec is a public-private partnership which has a singular goal to ensure better preparedness for the next pandemic.

COMMUNITY HEALTH DURING COVID-19

In the fall of 2020, Class of 2023

students participated in the largest and most comprehensive public health project ever completed by a UVM medical student class. Titled "Our Community's Health: What's Important to You?" the project focused on identifying the most pressing challenges experienced by Vermonters during the pandemic. An electronic survey was disseminated to partners of the United Way of Northwest Vermont, distributed to Vermont community members, and linked to websites including the Vermont Department of Health.

SOCIETAL ASPECTS MOST IMPACTED BY COVID-19

#1

SOCIAL INTERACTIONS

#2

INCOME

#3

CHILDCARE

#4

HEALTH CARE

#5

CARING FOR THE ELDERLY

LARNER COLLEGE OF MEDICINE CLASS OF 2021 RESIDENCY MATCH LIST

ANESTHESIOLOGY

Jack Dubuque University of Utah Health
Marc Hammond University of Vermont Medical Center
Marc Kostrubiak University of Vermont Medical Center
Matthew Lebow Medical University of South Carolina
Flora Liu University of Utah Health
Collin Love McGaw Medical Center of Northwestern University
Ashton Pike Oregon Health & Science University
Jessica Sikka Beth Israel Deaconess Medical Center
Derek Tan University of Miami/Jackson Health System
Timothy Woodin Ohio State University Medical Center
Ibrahim Hussein Brown University/Rhode Island Hospital

CHILD NEUROLOGY

Emily Eichner University of Colorado School of Medicine-Denver

COMBINED ADULT/CHILD PSYCHIATRY

Olivia Harrison University of Vermont Medical Center

DERMATOLOGY

Joy Lowry University of Rochester/Strong Memorial
Michael Chmielewski University of Minnesota Medical School

DIAGNOSTIC RADIOLOGY

Liam duPreez Norwalk Hospital
Catherine Westbom Allegheny General Hospital

EMERGENCY MEDICINE

Daniel Bak University of Vermont Medical Center
Rio Beardsley Stanford University
Samantha Bissonette Dartmouth-Hitchcock Medical Center
Cameron Burke University of Massachusetts Medical School
Alexandra Churchill Wright-Patterson Medical Center
Samuel Epstein Cook County Health and Hospital Systems
Kalle Fjeld Dartmouth-Hitchcock Medical Center
Alexa Golden University of Pittsburgh Medical Center Pinnacle Hospital
Naira Goukasian University of North Carolina Hospitals
Raghav Goyal Alameda Health System-Highland Hospital
Elizabeth Lanata Brown University/Rhode Island Hospital
Elizabeth Lynch University of New Mexico School of Medicine
William Prince Denver Health Medical Center
Nam Trinh MedStar Washington Hospital Center (Washington D.C.)

FAMILY MEDICINE

Jack Chen University of Iowa Hospitals and Clinics
Jenna Dafgek Middlesex Hospital (Middletown, Conn.)
Jhaimy Fernandez Harbor-UCLA Medical Center
Mary Griffin McKay-Dee Hospital Center (Ogden, Utah)
Adam Lacayo UVM Health Network CVPH (Plattsburgh, N.Y.)
Casandra Nowicki Stamford Hospital/Columbia
Ellen Seyller Middlesex Hospital (Middletown, Conn.)
Kathryn Thomas Albany Medical Center
Laura Till Brown University/Kent Hospital
Christopher Veal Carle Foundation Hospital (Urbana, Ill.)

GENERAL SURGERY

Susan Campbell University of Vermont Medical Center
Hillary Danis William Beaumont Army Medical Center (El Paso, Tex.)
Racquel Gaetani Lahey Clinic (Burlington, Mass.)
Van Hoang University of North Carolina Hospitals
Meredith Lackie Walter Reed National Military Medical Center
Catherine Pratt University of Cincinnati Medical Center
Georges Tahhan University of Miami Miller School of Medicine/Holy Cross Hospital

INTERNAL MEDICINE

Juan Conde Fabela University of Washington Affiliated Hospitals
Andrew Darling Tulane University School of Medicine
Jonathan Gau University of California Irvine Medical Center
Dylan Koundakjian Emory University School of Medicine
Sean Meagher Beth Israel Deaconess Medical Center
Michael Carlo Nilo St. Luke's Hospital-Bethlehem
Kenneth Palanza Loyola University Medical Center
Sienna Searles University of Vermont Medical Center
Shivani Seth Icahn School of Medicine at Mount Sinai/Mount Sinai Hospital
Sarah Sherman Tulane University School of Medicine
Alan Su Providence Health (Portland, Ore.)
Heng Tan University of Miami/Jackson Health System
Matthew Tsai Beth Israel Deaconess Medical Center
David Viscido University of Massachusetts Medical School

NEUROLOGICAL SURGERY

Katherine Callahan University of Vermont Medical Center

NEUROLOGY

Connor Scagnelli University of California Irvine Medical Center

OBSTETRICS & GYNECOLOGY

Sidika Kajtezovic Boston University Medical Center
Kathryn Kurchena Brown/Women & Infants Hospital

OPHTHALMOLOGY

Collin Anderson SUNY Upstate Medical University

ORTHOPAEDIC SURGERY

Annabelle Davey University of Connecticut School of Medicine

OTOLARYNGOLOGY

Alexander Karabachev University of Cincinnati Medical Center

PATHOLOGY

Nicholas Haslett University of Vermont Medical Center
Amanda Kardys Hospital of the University of Pennsylvania
Maxwell Knapp Oregon Health & Science University

PEDIATRICS

Menna Awadalla University of North Carolina Hospitals
Elizabeth Congdon University of Utah Health
Christina Dawson University of North Carolina Hospitals
Alexis Dela Cruz Duke University Medical Center
Sarah French University of Vermont Medical Center
Benjamin Grebber Tufts Medical Center
Reed Hausser University of California San Francisco
Sidney Hilker Boston Children's Hospital
Istvan Kanyo New York Presbyterian Hospital-Weill Cornell Medical Center
Kristen Keene University of Vermont Medical Center
Olivia Larkin Massachusetts General Hospital
Bridget Moore Spectrum Health/Michigan State University
Katrina Thornburgh New York Presbyterian Hospital-Columbia University Medical Center

PEDIATRICS/MEDICAL GENETICS

Brian Muchmore University of Michigan Hospitals-Ann Arbor

PHYSICAL MEDICINE AND REHABILITATION

Pirapon Chaidarun Rutgers-New Jersey Medical School

PLASTIC SURGERY

Max Silverstein Stanford University
Hanaa Shihadeh Albany Medical Center

PRELIMINARY MEDICINE

Jack Fitzsimons Loyola University Medical Center

PRELIMINARY SURGERY

Jared Bomba University of Vermont Medical Center
Audrea Bose Brown University/Rhode Island Hospital
John Vandenberg New York Medical College-Metropolitan Hospital Center
Hannah Woodruff SUNY Upstate Medical University

PRIMARY MEDICINE

Joshua Taylor University of Hawaii
Stephanie Udawatta Yale-New Haven Hospital

PSYCHIATRY

Jonathan Borden University of Vermont Medical Center
Jessica Lyon Medical University of South Carolina
Laura Nelson Oregon Health & Science University
Vincent Nocera San Mateo Behavioral Health & Recovery Services
Shae Rowlandson University of Connecticut School of Medicine
Michael Weber University of North Carolina Hospitals



Vaccinated medical students are following COVID-19 CDC guidelines.



READ AN ADDRESS FROM THE STUDENT COUNCIL PRESIDENT, VIEW MESSAGES TO THE CLASS OF 2021 FROM ALUMNI AND FACULTY, AND VIEW AN INTERACTIVE MAP OF RESIDENCY MATCH LOCATIONS: [MED.UVM.EDU/VTMEDICINE/WEB-EXTRAS](https://med.uvm.edu/vtmedicine/web-extras)

A TROPICAL VACATION

Class of 2021 Celebrates Match Day

On Friday, March 19, members of the Class of 2021—along with senior medical students across the country—learned where they will be practicing as residents on Match Day. Students celebrated with their friends, family and classmates through a virtual event with a tropical vacation theme. The event opened with a welcome from Larner Dean Rick Page, M.D., who acknowledged the students' unique journey of completing medical school during a pandemic.

CLASS OF 2021 MATCH RESULTS

107 STUDENTS MATCHED

68 INSTITUTIONS

13 IN VERMONT

41 TO PRIMARY CARE

INCENTIVES COULD ENHANCE COVID-19 VACCINE ADHERENCE

A analysis in *Preventive Medicine*

by a team led by Professor of Psychiatry **Stephen Higgins, Ph.D.**, director of the Vermont Center on Behavior and Health (VCBH), examines the evidence on incentivizing vaccine adherence, concluding that the strategy may be helpful to achieve herd immunity.

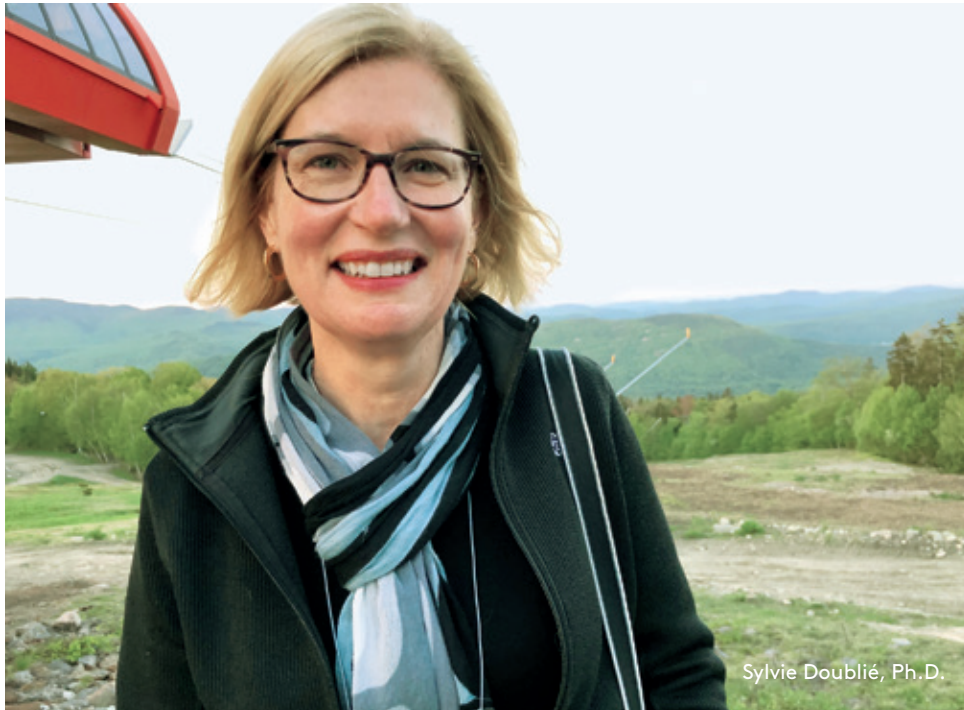
In their paper, Higgins and his VCBH research colleagues **Elias Klemperer, Ph.D.**, and **Sulamunn Coleman, Ph.D.**, describe results from several controlled trials that support the efficacy of incentivizing vaccine adherence. An example from their literature review focused on the impact of using incentive strategies to increase adherence to the three-dose hepatitis B virus vaccine among injection drug users. Individuals dependent on illicit drugs often face barriers ranging from co-occurring medical conditions to



Stephen Higgins, Ph.D.

socioeconomic instability, which can make adhering to preventive medical regimens highly challenging.

Their systemic literature reviews found strong support for the use of incentives, including a 2019 meta-analysis of the literature showing that modest financial incentives resulted in a seven-fold increase in adherence compared to no incentives.



Sylvie Doublie, Ph.D.

Doublie & Colleagues Discover Dual Function in Enzyme Critical for Cancer Growth

Considered the most lethal form of DNA damage, double-strand breaks must be repaired to prevent cell death. In developing therapies for hard-to-treat breast and ovarian cancers in patients with BRCA gene mutations, scientists aim to identify ways to keep cancer cells from using DNA break repair pathways. New findings demonstrate a previously-unknown capability for polymerase theta (pol theta)—a key enzyme in this repair function—that shows promise as a new avenue for treatment development.

The study results are published in *Molecular Cell*.

Researchers at UVM, The University of Texas MD Anderson Cancer Center (MD Anderson), and Yale University discovered that pol theta, previously known to extend DNA in the repair process, is also able to behave like a nuclease and trim DNA.

Because these cancer cells rely on the pol theta pathway to survive and repair double-strand breaks, researchers have been focused on pol theta and trying to find out how to inhibit this pathway.

“Pol theta is a ‘hot’ enzyme right now,” says senior author and self-described “polymerase geek” **Sylvie Doublie, Ph.D.**, professor of microbiology and molecular genetics. “This is a new activity for pol

theta; it’s an elegant way of solving the problem—you only need one enzyme.”

For patients with hard-to-treat cancers, this finding could lead to the development of new therapeutic options, like the Poly-ADP-ribose polymerase (PARP) inhibitors class of drugs that have been used to treat breast and ovarian cancer over the past decade.

“The cell has to decide which function needs to be applied and this trimming activity is a point of vulnerability for pol theta,” says Doublie. One aim of the research is to create conditions where one reaction can be encouraged over the other.

A potential role for such an inhibitor would be to improve ionizing radiation therapy in cancer patients with BRCA1 or BRCA2 mutations.

Doublie’s former doctoral student **Karl Zahn, Ph.D.**, now a postdoctoral fellow at Yale, saw evidence of this dual function in pol theta several years ago while working in Doublie’s lab. He carried out the experiments described in the paper after engaging the expertise of Richard Wood, Ph.D., professor of epigenetics and molecular carcinogenesis at MD Anderson. Wood and Doublie have had a long-term collaboration, funded by a Program Project grant from the National Cancer Institute.

Research

Lawrence McCrorey’s Legacy

Longtime professor led efforts to combat racism

In the H. Lawrence McCrorey Gallery of Multicultural Art in the Howe Library, the spirit of one of the university’s most respected and beloved professors continues to exert a quiet influence. Established at his retirement in 1995, it’s a fitting memorial for a champion of social justice and a true renaissance man, an accomplished jazz saxophonist who began performing with bands in Camden, N.J., at age 13.

When Larry McCrorey joined the UVM department of physiology and biophysics in 1966, he was one of just two Black faculty on campus. He had come to UVM from the University of Illinois College of Medicine in Chicago, following his graduate school mentor Norman Alpert, who recruited McCrorey to help him build a strong teaching program. While he would go on to excel in front of the classroom, winning numerous University teaching awards, McCrorey made a wider impact on the University and Vermont through his work to combat racism.

In 2002, speaking to Fran Stoddard on Vermont Public Television’s “Profiles,” McCrorey

recalled the challenges that racism presented when he moved into the state in the mid-sixties. “When I recognized what was happening here, I said to my boss, Norman Alpert, ‘Look, I don’t want to embarrass you, you brought me here. But I’ve got to fight this stuff. I can’t just be a scientist or just be a professor. I’m going to have to be involved politically.’”

Alpert’s response: “If you didn’t get involved politically, I’d be very upset with you.”

As both a moral and educational leader, McCrorey stood on the shoulders of his direct ancestors. His father was the Presbyterian minister of Lombard Central Church in Philadelphia, his grandfather the first African-American president of Johnson C. Smith University, a historically Black college in North Carolina. At UVM, McCrorey’s roles would come to include dean of the School of Allied Health Sciences (now the College of Nursing and Health Sciences), and associate vice president for academic affairs.

McCrorey was a frequent public speaker in the community, an adviser to three governors, and a charter member of the



state’s Human Rights Commission. Larry McCrorey passed away in 2009 at age 82, but his teaching continues at Howe Library. All would do well to pause and remember him through his words stenciled on a slate blue wall at the north entrance of the McCrorey Gallery: “Each person needs to look into himself or herself to encounter the racism there, to uncover it, and to finally deal it a death blow. Each of us needs to understand that the price of hating other human beings is loving oneself less.” — Tom Weaver

The LHOME Initiative Fills a Crucial Gap for Medical Students

Challenges related to the social determinants of health

—food insecurity, unstable housing, financial instability—disproportionately effect non-traditional students and students who are underrepresented in medicine. Often far from home and personal support networks, the results can be calamitous. Students may struggle to maintain their grades and balance curricular commitments, suffer mental health crises, and in some cases must put their medical education on pause or leave school entirely.

The LHOME initiative, founded by Dana Allison ’23 with support from Jasmine Robinson, M.D.’20 and Tiffany Delaney, M.Ed., director of the Office of Diversity, Equity and Inclusion, addresses these gaps. Their mission is to “establish internal avenues of support for [medical] students [including a] main resource hub to focus on their academics and professional responsibilities—to help medical students meet all academic and professional expectations; improve academic performance; contribute to ongoing class-wide student support; and limit medical student attrition.”

In creating LHOME, Allison worked with fellow students and faculty to create a student survey, joined the UVM Food Insecurity Working Group, connected with Medical Student Financial Services Coordinator Kari Brayden, and reached out to Hunger Free Vermont and 3Squares VT to pull together an Emergency Relief Town Hall for Larner medical students. A corresponding online resource guide is available to students.

“Dana and her collaborators led the way to helping us develop a language and a dialogue about issues related to basic needs and equity. These issues can be hard to discuss, but they only worsen in silence.” — Lee Rosen, Ph.D., director of student well-being and interim associate dean for students

The LHOME Initiative team’s plans include weekly reminders about resource availability and contacts via the Medical Student Wellness Committee’s Instagram account and the weekly medical student e-newsletter, as well as ongoing work to address new or widening gaps in need and resources.

Notable



Cipolla Receives 2021 Thomas Willis Lecture Award

Marilyn Cipolla, Ph.D., professor of neurological sciences, obstetrics, gynecology and reproductive sciences, and pharmacology, has been awarded the 2021 Thomas Willis Lecture Award from the International Stroke Conference Program Committee and the American Stroke Association's Council on Stroke. She presented at the 2021 International Stroke Conference, held virtually in March of 2021. The Thomas Willis Award honors the prominent British physician credited with providing the first detailed description of the brain stem, the cerebellum, and the ventricles. The award recognizes contributions to the investigation and management of stroke basic science.



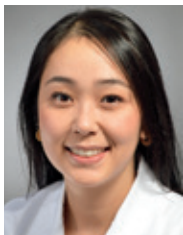
Francklyn Named AAAS Fellow

Professor of Biochemistry **Christopher Francklyn, Ph.D.**, has been named a Fellow of the American Association for the Advancement of Science (AAAS), the world's largest multidisciplinary scientific society. AAAS, which publishes cutting-edge research through its *Science* journals, awards fellowships based on researchers' distinguished efforts to advance science or its applications. Francklyn was elected as an AAAS fellow for "paradigm shifting discoveries that link control of protein synthesis with biological mechanisms and regulatory compromises in cancer, blindness and deafness."



Mullen Honored With 2020-21 Parsons Award

Patrick Mullen, a doctoral student in the Neuroscience Graduate Program, is the recipient of the 2020-2021 Rodney L. Parsons Anatomy and Neurobiology Award, which honors Rodney Parsons, Ph.D., professor emeritus and former chair of anatomy and neurobiology. The award aims "to support outstanding graduate students who demonstrate excellence in both neuroscience research and teaching in any broadly defined anatomical science." Mullen is mentored by Christopher Francklyn, Ph.D., professor of biochemistry, and Alicia Ebert, Ph.D., associate professor of biology.



Burgess Named Director

Lee-Anna K. Burgess, M.D., has been appointed director of the Nutrition, Metabolism, Gastrointestinal System (NMGIS) course in the Foundations Level of the Vermont Integrated Curriculum. Burgess has been a member of the UVM faculty since 2018 and is an assistant professor of medicine in the Division of Hospital Medicine. She received her M.D. from the University of Queensland in Brisbane, Australia, and completed an internal medicine residency at the UVM Medical Center, where she was Chief Resident in 2017-2018. She is the recipient of the 2017 Frank L. Babbott Memorial Resident of the Year Award and the 2020 Mark A. Levine Clinical Teacher of the Year Award.



Steele Appointed Director

J. Steele Taylor, M.D., has been appointed director of the Medical Neuroscience course (MedNeuro) in the Foundations Level of the Vermont Integrated Curriculum. He received his M.D. from the Larner College of Medicine in 2015, joined the UVM faculty in 2020, and is an assistant professor of neurological sciences. He completed a residency in neurology at the UVM Medical Center, followed by a fellowship in clinical neurophysiology. Taylor is the recipient of the 2015 Herbert Martin Sr., M.D. Award for Excellence in Neurology, a 2020 Larner College of Medicine Alpha Omega Alpha Housestaff Award and is a member of the Teaching Academy. He serves as a neurologist and co-chief of the Memory Disorders Division at the UVM Medical Center.

KAMIN MUKAZ NAMED TO LIST OF INSPIRING BLACK SCIENTISTS



Debora Kamin Mukaz, M.S., Ph.D., postdoctoral associate in the Division of Hematology/Oncology in the Department of Medicine, was named to Cell Mentor's 1,000 Inspiring Black Scientists, a recognition of "individuals who've helped push us to the next level." She played a lead role in the national #BlackinCardio campaign this year, organized to raise awareness of cardiovascular diseases in the Black community. Originally from the Democratic Republic of the Congo, Mukaz graduated with a B.A. in biology and French from Luther College. She earned an M.S. in biological sciences and a Ph.D. in medical sciences at the University of Delaware. At UVM, her research focuses on analyzing and interpreting cardiovascular and cardiometabolic data for the Reasons for Geographic and Racial Differences in Stroke (REGARDS) study, a large national study funded by the NIH with a goal to better understand racial and regional disparities in stroke.

STEPPING UP FOR THE COMMON GOOD

As researchers across the world race to develop and distribute vaccines to stop the spread of COVID-19, Vermonters and New Yorkers have offered their arms to science, volunteering to participate in the Oxford-AstraZeneca COVID-19 vaccine trial at the UVM Medical Center and UVM Vaccine Testing Center. These volunteers come from diverse backgrounds and offer varying reasons for becoming involved. A unifying theme, though, is a desire to be part of something bigger than themselves.



WEB EXTRA: WATCH A SHORT VIDEO FEATURING VACCINE TRIAL PARTICIPANTS:
[GO.UVM.EDU/VACCINETRIAL](https://go.uvm.edu/vaccinetrial)



"All of us are beneficiaries of sacrifices that people have done in the past, whether it be for vaccines or any other kind of medical development. The least I could do is volunteer, knowing that I could use my body for the benefit of the common good." – Milton Rosa-Ortiz, R.N., UVM Medical Center



"When I signed up for this, I was thinking about my husband, my children and my grandchildren. Just to be able to do something, rather than just sit on the couch and worry. I'll be really proud if something I did contributed to helping save people's lives." – Lynne Niebling, Randolph, Vt.

"It's now known that Native People are at higher risk of illness caused by the COVID-19 virus. Due to health disparities, our people have some of the highest rates in Vermont of underlying health conditions, such as diabetes, that increase our risk for COVID-19. It is vital that we protect our elders and most vulnerable from this pandemic. They hold our history and cultural knowledge. Participating in this trial will help do just that."

– Chief Don Stevens of the Nulhegan Band of the Coosuk-Abenaki Nation



SHOWING UP:

VCHIP LEVERAGES NETWORK TO HELP VERMONT PROVIDERS DURING PANDEMIC

Vermonters have a reputation for showing up for their community—whether there’s a pandemic or not. That’s also true for the faculty and staff of the Vermont Child Health Improvement Program (VCHIP), who have underscored over the past year just how important their role is to ensuring providers get access to critical resources and tools that allow them to deliver quality care.

Following the state’s first confirmed case of COVID-19 on March 7, 2020, the Vermont Department of Health (VDH) set up an 8 a.m. to 5 p.m. hotline and was quickly inundated with calls from medical professionals and community members alike. Within a span of about 48 hours, well-child visits moved to telehealth, which led to new workflows, new technology, and reimbursement issues.

A regular partner with VDH, VCHIP representatives, including Executive Director Judy Shaw, Ed.D., M.P.H., R.N., Professor of Pediatrics Wendy Davis, M.D., and Associate Professor of Pediatrics Breena Holmes, M.D., realized that instead of helping staff phone calls, they could leverage VCHIP’s CHAMP (Child Health Advances Measured in Practice) program to help share just-in-time and sorely-needed COVID-19 information with providers in their network—and beyond.

Answering the call for help with CHAMP

“VCHIP is known for saying ‘how can we help?’” says Shaw, a professor of pediatrics and nursing who has built VCHIP—founded in 1999—to nimbly rise and respond to the Vermont pediatrics community’s needs.

On March 13, VCHIP and VDH leaders met, and on March 18, they tested their idea to hold the COVID edition of the CHAMP call to push out information while Department of Health representatives listened. “What transpired was just magical,” Shaw says.

“Schools and childcares were closing; the health department staff was trying to keep up with accurate and up-to-date information-

sharing and VCHIP answered the call,” said Holmes, who is a physician advisor to the Division of Maternal Child Health at the VDH. “Integrating clinical medicine and public health was our pre-COVID approach, so it felt natural to be supportive and team up during this crisis.”

Founded on long-term partnerships with VDH, the Vermont Chapter of the American Academy of Pediatrics (AAP), and the Vermont Academy of Family Physicians, the CHAMP initiative was launched in 2012 by Sara Barry, M.P.H., now director of clinical and quality improvement for OneCare Vermont and a VCHIP senior advisor. Through regular webinar calls, CHAMP offers collaborative improvement activities to meet the evolving needs of health care professionals, children, and families.

Pre-pandemic, says Davis, the VCHIP CHAMP team would support efforts to “strengthen Vermont’s system of high-performing pediatric medical homes.” The call discussions focused on such topics as delivering primary care for infants, children and adolescents according to the Bright Futures guidelines, particularly working to ensure that the Vermont Medicaid population receives the same level of care as all others. Then COVID-19 hit.

“We made a split-second decision to step up this activity on March 16 or 17,” says Davis, who was health commissioner in 2009 during the H1N1 pandemic. “VCHIP felt there was a need to collate data focused on the pediatric population and extract the information most relevant to children and families.” One example was pregnant women and newborn care and determining what type of policies should be set for women coming into the hospital to deliver, arranging breastfeeding assistance, etc. “We said ‘we’re going to step into that space and see how we can support people,’” explains Davis.

The CHAMP webinar calls are available through an Adobe Connect meeting online,

which provides the slides and a chat for questions and responses, and several options for connecting to audio—a call-in number and code that folks can dial on their phone, a dial-out option to receive a call from the Adobe Connect meeting to connect to the audio, or an option to use the microphone on their computer/device. Currently conducted on Mondays, Wednesdays and Fridays, the calls take place from 12:15 to 12:45 p.m.—often extending to 1 p.m.—and are all archived, along with the slides, and available through a link on the VCHIP home page.

Co-led by Davis and Holmes, the calls start with a brief situation update, with information the CHAMP team curates from the Governor’s press conferences, critical updates from the AAP and Centers for Disease Control and Prevention, health advisories and alerts, and a segment called “practice issues.” There are also expert guests, like infectious disease (ID) specialists William Raszka, M.D., professor of pediatrics, and Benjamin Lee, M.D., assistant professor of pediatrics, who have answered ID questions, provided information on the severe inflammatory response when it began showing up in kids, and discussed safe practices in schools. On December 7, the practice issue was a VDH Immunization Program Update—a timely topic as the world was readying for the first distribution of the Pfizer vaccine.

Shaw says more than 100 people participate in each call—a sign that they are needed.

The secret to CHAMP’s success

“We’ve leveraged the uniqueness of our programs, using the foundation of CHAMP and the credibility of VCHIP, and aligned all the people interested in children and families—including schools,” said Shaw. “We are walking this path together, shoulder-to-shoulder.”

She credits Davis and Holmes with



Alexandra Bannach, M.D. (far right), medical director of North Country Pediatrics in Newport, Vt., and the team of healthcare providers

possessing a unique blend of skills, perspectives and experience that have led to the CHAMP calls’ success. Both had careers as general pediatricians before transitioning into public health. In addition to being a former Vermont health commissioner, Davis is on the board of the national AAP, a Vermont AAP leader, associate director of the National Improvement Partnership Network and a VCHIP faculty and Senior Advisory Group member. A former director of Maternal Child Health at VDH, Holmes is a VCHIP faculty and Senior Advisory Group member and has served in a national capacity on the AAP’s Council on School Health. The two were recently honored jointly with the Vermont AAP’s 2020 Green Mountain Pediatrician award in recognition for their work on the CHAMP calls.

Davis is quick to add that the following VCHIP staff members play an integral role in ensuring each call’s success: Project coordinators Avery Rasmussen and Angela Zinno, M.A.; Christine Pellegrino, quality improvement associate; Miki Beach, M.A., program administrator; and Jennifer Le, outreach and training associate.

Pediatricians, family medicine physicians, and a wide range of folks who work with children and families have embraced the sense of partnership and collaboration the calls offer.

At a November 2020 Pediatrics Grand Rounds CHAMP COVID presentation, Professor and Chair of Pediatrics Lewis First, M.D., lauded the pair, saying “What you have done is anchored all of us, allowed us to breathe and continue, and accomplish far more than we thought we could.”

Pediatrician Alexandra Bannach, M.D., medical director of North Country Pediatrics in Newport, Vt., is living proof of the calls’ positive impact.

“Drs. Breena Holmes and Wendy Davis are my heroes!” she exclaims. “The guidance from the experts . . . makes it possible to always have the latest information about COVID. It would be impossible to do patient work and filter information on my own. The knowledge that I gain from the calls allows me to advocate and educate in our area, provide that information to other clinicians in my area and be a voice to the public.” **VM**

COVID LONG-HAULER:

SHE SURVIVED COVID-19,
BUT FULL RECOVERY
SEEMS UNCERTAIN

Becky Aitchison was full of hope as she headed home from the hospital on April 2, 2020, accompanied by the cheers and applause of her care team. After spending seven days in the intensive care unit (ICU) at University of Vermont Health Network–Central Vermont Medical Center with a serious case of COVID-19, she no longer needed supplemental oxygen. The piercing headaches had subsided, and she’d regained her sense of taste and smell. Fifty-three years old, with no underlying health conditions, she had every reason to expect that her health and her life would soon return to normal.

Now Aitchison wonders whether she will ever be 100 percent well. She feels far removed from her pre-COVID self. That person, according to her husband, Brian, was a “strong-willed individual who could somehow defy illness. She never got sick.”

Aitchison is among an unknown number of COVID-19 survivors in our region and around the globe—collectively referred to as long-haulers or people with “Long COVID”—who experience a wide range of mystifying symptoms weeks and months after infection, from the more common coughing and joint pain to the more rarely reported hair loss and inflammation of the heart muscle.

Aitchison struggles with uncharacteristic fatigue, intermittent insomnia, shortness of breath when exercising, recurring headaches and brain fog—an especially confounding condition that sometimes leaves the accomplished insurance accountant challenged to find the right words.

“I won’t call myself recovered,” she says. “I’m a survivor, and this is very much a life-changing journey.”

An Unfortunate Pioneer

When it comes to the novel coronavirus, Aitchison was an unwitting pioneer in the very earliest days of the pandemic’s arrival in Vermont. She was counted among the state’s

first 35 known cases, and the first positive case for her town of Berlin. She was also the first COVID-19 patient to complete treatment at Central Vermont Medical Center’s ICU instead of transferring to the University of Vermont Medical Center.

Aitchison presented at the hospital with double viral pneumonia and low blood oxygen that was rapidly declining.

“I clearly recollect having that feeling: She might not beat this,” Brian says, remembering the sobering phone call from Aitchison’s doctor preparing him for the possibility she might be intubated and put on a ventilator. It was a great relief when she responded to high-flow oxygen through a nasal cannula instead, and began to rapidly improve.

Brian joined Becky in her hope of a full recovery when he brought her home a week later.

“I really thought there would be a defined recovery, but it kind of ebbs and flows. Her ‘COVID voice’ sometimes pops back—it’s a little bit raspy and a deeper tone that is very distinctive. And then there’s the brain fog. Becky is an accountant—she is smart, detailed and articulate—but now sometimes she has a problem expressing herself,” he says. “This thing just keeps on giving in a bad way.”

A Sense of Isolation

The Centers for Disease Control and Prevention (CDC) reports that some patients can have symptoms that last for weeks or months after recovery from acute illness. But even the people who don’t get as sick as Aitchison and develop only mild illness, the CDC points out, “can experience persistent or late symptoms.”

Early studies from around the globe reveal a wide range of findings about just how many long-haulers there are. In a recent paper published in the *Journal of Microbiology and Infection*, a follow-up of 150 adults with only mild to moderate COVID-19 cases showed that two months later, two-thirds of them

were still experiencing symptoms, most commonly shortness of breath, loss of smell and taste and/or fatigue.

For individual long-haulers, the experience can be isolating. Aitchison says she is grateful for the “wonderful care” she received while a patient at Central Vermont Medical Center, but was disappointed there was no program in Vermont to track the progress of COVID-19 patients and manage their ongoing symptoms. Her care representative at Blue Cross Blue Shield helped connect her with a pulmonologist at Central Vermont Medical Center for a follow-up appointment and, on June 1, she had a full lung function examination.

The results came as both a relief and a puzzle. X-ray images of her lungs showed no visible scarring and various tests concluded that her lungs were functioning within normal range. Yet Aitchison continues to be bothered by shortness of breath and a tightening sensation in her chest when she goes for a 30-minute walk.

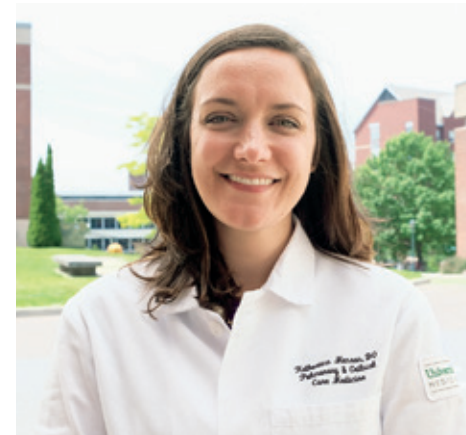
At the UVM Medical Center, the UVM Health Network affiliate hospital that saw the bulk of acute COVID-19 patients early in the pandemic, Katherine Menson, D.O., a pulmonologist and assistant professor of medicine, has treated similarly baffling cases.

“I’ve been seeing these patients with persistent COVID symptoms in clinic and really coming up short with any answers to offer them about what’s causing their respiratory symptoms. They are obviously feeling very scared and unsettled with how little is known,” she says.

This sense of uncertainty led Menson and her colleague, Professor David Kaminsky, M.D., also a pulmonology and critical care physician, to start a support group.

“You Are Not Alone”

The COVID Survivor Support Group is open to all UVM Health Network patients in Vermont and Northern New York and is



Above: Becky Aitchison, post-hospitalization. Below: Katherine Menson, D.O., and David Kaminsky, M.D.



designed as a safe space where participants can share and learn.

“These patients are frustrated because a lot of doctors don’t believe that these long-term symptoms are real, and they’re suggesting to patients that it’s just anxiety or depression or emotional distress resulting from the illness,” says Kaminsky. “All those things might be contributing, but I don’t think that’s the root cause. I think there may be something the virus is doing directly to our bodies or that the immune response is doing to our bodies that’s resulting in these persistent symptoms.”

The most important aspect of the support group, he adds, is to “let people know they’re not alone and they are being heard.”

Aitchison was happy to find a local support group that was led by medical professionals to ensure the guidance was grounded in science.

“This support group is very affirming because before I just felt dismissed,” says Aitchison. “And because it’s led by medical professionals, it’s giving me the drive to maybe reach out and get some follow-up appointments and advocate further for myself.”

Kaminsky is also director of the Pulmonary Function Laboratory at the Vermont Lung Center. He is conducting a research study there, funded by The UVM Medical Center Foundation, to track lung function in 50 participants who have had mild or serious cases of COVID-19 and now test negative for the disease. Kaminsky believes his research will make a significant contribution to understanding how COVID-19 affects the lungs.

“I felt compelled to put together a study where we could monitor people over time for at least a year,” he explains. “We’ll be learning what it naturally looks like to have had COVID. I’m testing both people who are hospitalized or not hospitalized and who have persistent symptoms or don’t. We’re trying to get a broad view of how COVID is affecting the lungs. I think this is going to be unique compared to other studies, because we’ll be looking at a broad cross-section of people rather than one defined group of people.”

Aitchison has just been accepted into the study and is pleased to be able to contribute to the growing body of knowledge about “Long COVID.” She has twice donated her “liquid gold” convalescent blood plasma through the American Red Cross with the hopes of helping another patient recover.

The more she helps herself and others solve the mysteries of COVID-19, the more she feels like her determined, indomitable, pre-pandemic self.

“This has brought me on a life-changing journey. I’ve learned I’m stronger than I thought, sometimes I need to put myself first, accept help, speak from my heart, be open to others and, most importantly, advocate for what’s needed,” Aitchison says. The inspirational message she once proudly displayed in her office seems especially apt now, sitting in her home work space: “You never know how strong you are until being strong is the only choice you have.” **VM**

BUILDING THE FUTURE

While the past year has meant working remotely for many people in order to stay safe and combat the COVID-19 pandemic, since October of 2020 that hasn't been the case for PC Construction Company workers at the southern end of the Larner College of Medicine's Burlington campus. Working in accordance with outdoor health safety protocols, they've been digging foundations, pouring concrete, and starting the steel framework for the latest chapter in the College's research mission: the Firestone Medical Research Building.

Announced in October 2019 with a lead gift of \$8 million from alumnus Steve Firestone, M.D.'70, the building will bring state-of-the-art facilities to researchers at the College. Twenty-first century biomedical translational research success comes about through cross-disciplinary efforts that bring together expertise from across basic science and clinical departments, to explore new solutions and bring them to the bedside to improve patient care. To achieve those results, today's research facilities need to be engineered for flexibility, to allow for easy adjustment of laboratory spaces as teams evolve their approaches.

This is what the Firestone Building brings to UVM: 59,000 square feet of versatile space that can adjust with the flow varied research projects in the coming years. In addition to serving the scientists of today, the Firestone Building will allow the College to expand the scope, impact, and funding of research programs, and recruit the world-class scientists of tomorrow.

In support of this approach, the first floor of the building will house the UVM Center for Biomedical Shared Resources (CBSR). Funded by a \$5.47 National Institutes of Health (NIH) grant, new Center will integrate five of the leading UVM laboratory-based, shared resource core facilities in one convenient location.

Fundraising for the building, in addition to Dr. Firestone's lead gift, continues, with over \$10 million already raised. More information about the facility can be found at med.uvm.edu/FirestoneBuilding.



View from the East



View from the Northeast



View from the North, including the Anton Courtyard

FACTS

- 34 principal investigator offices
- 200 wet benches
- \$44 million total cost
- \$20 million goal for philanthropy
- 59,000 total square feet
- 225 estimated personnel capacity

TIMELINE

